



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

NOTES AND LITERATURE

GENERAL BIOLOGY

Mental Development in the Child and the Race.¹—"Then there are the biologists — one almost despairs of them! Are there any yet born to follow the two I have named (Spencer and Romanes) in finding mind as interesting as life?" Professor Baldwin has not been compelled to repeat in the new edition of his stimulating book the statement which we have quoted from the preface to his first edition, for, as he remarks, the ten years since it was written have witnessed a remarkable change in the attitude of biologists toward psychology. The truth is that not a few of the leaders in biological science have read Professor Baldwin's book and have found in it excellent reasons for opening their minds to the results of the scientific investigation of consciousness. It is to be hoped that many more of them will read the new edition of "Mental Development" critically and with a view to bringing the author's facts, principles, and theories into relation to the pre-eminently important problems of heredity which now occupy the attention of so many biologists.

Since, on its appearance ten years ago, "Mental Development" received many lengthy review notices it is not fitting that we should fully describe the content of the new edition. The author in revising his book has introduced a number of minor changes, but the work stands essentially as it was originally written. For the benefit of those who may desire a more complete statement of Professor Baldwin's views than can be obtained by a reading of the volume under consideration we may say that three other books are now available: "Social and Ethical Interpretations," "Development and Evolution," and "Thought and Things."

R. M. YERKES.

Racial Descent in Animals.²—Since the general acceptance of the

¹ Baldwin, James Mark. *Mental Development in the Child and the Race: Methods and Processes*. With seventeen figures and ten tables. Third edition, revised. New York, The Macmillan Company. 1906. Pp. xviii + 477.

² Montgomery, T. H., Jr. *The Analysis of Racial Descent in Animals*. Henry Holt and Co., New York, 1906, xxi + 311 pp.

theory of descent with modification, the exact genealogical relationship of animals has been an ever recurring question. In one way or another it seems to have fascinated certain workers. With the superficial, it takes the form of arrangements of living species in what is assumed to be a genealogical sequence without regard to the fact that these animals are of the same generation, so to speak, and not ancestrally related. Speculations of this kind have brought much of this work into disrepute. With the serious-minded, attempts have been made to ascertain the principles by which kinship among animals can be determined, and to this class belongs the volume under consideration.

With much care and erudition Montgomery has sought for a sound basis by which animal relationship can be ascertained. This he has formulated in a series of principles as follows: first, evidence of kinship must be sought in the physiological as well as the morphological relations of animals, for these two provinces are in reality mutually interdependent; secondly, all the factors concerning animal processes must be scrutinized; thirdly, the relative value of the different kinds of evidence must be considered; fourthly, monophyletic origins should be assumed unless the opposite can be proved; fifthly, approximately intermediate connectants between species should be anticipated; sixthly, organic modification is a response on the part of the organism to a change in the environment; seventhly, comparisons between diverse organisms are, at best, of the nature of inexact homologies; and finally, the unit of comparison is the individual during its whole life and not at any arbitrarily chosen stage.

It is noteworthy that two classes of evidence much in vogue in the discussion of questions of this kind are belittled by Montgomery. According to him no special light is thrown by embryology on phylogeny, for the development of the individual does not in his opinion recapitulate the development of the race; and the evidence brought forward by paleontology is too fragmentary to be of any service. While it can frankly be admitted that the eight principles enunciated above are worthy of serious consideration in the determination of phylogenies, it is by no means clear that they are of prime importance as compared with certain others; for, notwithstanding the lengthy argument adduced by Montgomery, ontogeny may still vaguely outline phylogeny. The fact that the appearance of a new character in a species involves a change that must influence the whole life cycle of the animal from the egg to the adult does not necessarily blot out other more ancient characters that may appear only at certain stages

and that may recall an adult state of an early ancestor. Moreover it cannot be denied that the fossil record, meager though it is, is the real record, whereas any scheme evolved in accordance with the eight principles already named must remain, if untested by the fossil record, forever hypothetical. How little we would know of the real characters and genetic relations of the reptiles or of the mammals if we limited ourselves to these principles. But, it might be retorted, that granting what has been said about reptiles and mammals what light does the fossil series give us on the interrelations of such groups as the animal phyla, and to this question it must be admitted that no satisfactory reply can be made. But is it perhaps not well to confess at once complete ignorance of a question which from its very nature can receive only such an answer as will remain forever hypothetical? The reviewer is inclined to believe that it is.

G. H. PARKER.

Hough and Sedgwick's Physiology.¹—The volume under consideration is a reprint of the first half of "The Human Mechanism," by the same authors. The latter has been favorably reviewed in the *Naturalist* for March of this year (p. 194). The "Physiology" is an excellent text-book for high school grades, and since further editions will undoubtedly be called for, it is perhaps desirable to suggest that more attention might profitably be given to anatomy, upon which physiology is to some extent founded. The authors state that "in the present book anatomy has been reduced to its lowest terms and microscopic anatomy or histology has been touched upon only as far as seemed absolutely necessary." Some of the anatomical references which might be improved are as follows. On p. 167, "alveolus" is used for "lobule" of the lung; and "air cell" for "alveolus." The thyroid gland, a median, bilobed structure, is described as "two small organs which lie in the neck, one on each side of the trachea" (p. 66). The red corpuscles are said to be "biconcave disks" (p. 135) although they are now generally considered to be cup-shaped, with a small proportion of spherical forms; they vary in shape, but the biconcave form is not characteristic of circulating blood. Occasionally an unnecessary term is introduced,— "sarcostyle" is not better than muscle fibril or myofibril, and "synapse" is not, for high school scholars, an improvement upon terminal branches. (Neither sarcostyle

¹ Hough, T. and Sedgwick, W. T. *Elements of Physiology*. Boston, Ginn & Company, 1907. 12mo, 321 pp., illus. \$1.25.